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RE: Application No. 10/669,196  
In re application of: Robert G. Bean, et al.  
Assignee: SEAGATE TECHNOLOGY LLC  
Dkt. No.: STL11422

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PATENT  
Dkt. STL11422

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Robert G. Bean, Clark E. Lubbers and Randy L. Roberson  
Assignee: SEAGATE TECHNOLOGY LLC  
Application No.: 10/669,196 Group No.: 2113  
Filed: September 23, 2003 Examiner: Emerson Puente  
For: DATA RELIABILITY BIT STORAGE QUALIFIER AND LOGICAL UNIT METADATA

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TRANSMITTAL OF APPEAL BRIEF  
(PATENT APPLICATION-37 C.F.R. § 41.37)

1. Transmitted herewith, is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on November 2, 2006.

2. STATUS OF APPLICANT

This application is on behalf of other than a small entity.

3. FEE FOR FILING APPEAL BRIEF

Pursuant to 37 C.F.R. § 41.20(b)(2), the fee for filing the Appeal Brief is:

other than a small entity \$500.00

Appeal Brief fee due \$500.00

4. EXTENSION OF TERM

The proceedings herein are for a patent application and the provisions of 37 C.F.R. § 1.136 apply.

Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

## CERTIFICATION UNDER 37 C.F.R. §§ 1.8(a)

I hereby certify that, on the date shown below, this correspondence is being:

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Date: January 2, 2007

Diana C. Anderson  
Signature

Diana C. Anderson

(type or print name of person certifying)

## 5. TOTAL FEE DUE

The total fee due is:

Appeal brief fee

TOTAL FEE DUE

\$500.00

\$500.00

## 6. FEE PAYMENT

Authorization is hereby made to charge the amount of \$500.00 to Credit card as shown on the attached credit card information authorization form PTO-2038.

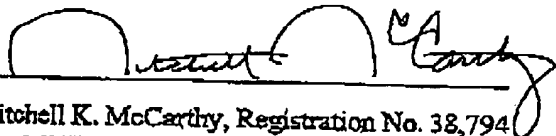
## 7. FEE DEFICIENCY

If any additional extension and/or fee is required, and if any additional fee for claims is required, charge Deposit Account No. 06-0540.

Respectfully submitted,

Date:

1/2/2007

  
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PATENT  
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## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Robert G. Bean, Clark E. Lubbers and Randy L. Roberson  
Assignee: SEAGATE TECHNOLOGY LLC  
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Filed: September 23, 2003 Examiner: Emerson Puente  
For: DATA RELIABILITY BIT STORAGE QUALIFIER AND LOGICAL UNIT  
METADATA

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, Virginia 22313-1450

ATTENTION: Board of Patent Appeals and Interferences

Sir:

## APPELLANT'S BRIEF

This Brief is in furtherance of the Notice of Appeal filed on November 2, 2006. The required fees, any required petition for extension of time for filing this Brief, and the authority and time limits established by the Notice of Appeal are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains these items under the following headings, and in the order set forth below:


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CERTIFICATION UNDER 37 C.F.R. §§ 1.8(a)

I hereby certify that, on the date shown below, this correspondence is being:

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Date: January 2, 2007

Diana C. Anderson  
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- 1 -

- I. REAL PARTY IN INTEREST
- II. RELATED APPEALS AND INTERFERENCES
- III. STATUS OF CLAIMS
- IV. STATUS OF AMENDMENTS
- V. SUMMARY OF CLAIMED SUBJECT MATTER
- VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL
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- IX. EVIDENCE APPENDIX
- X. RELATED PROCEEDINGS APPENDIX

### I. REAL PARTY IN INTEREST

The real party in interest in this Appeal is Seagate Technology LLC.

### II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this Appeal.

### III. STATUS OF CLAIMS

The status of the claims in this application is:

<u>Claim</u>	<u>Status</u>
1. (Original)	Independent.
2. (Original)	Depends from claim 1.
3. (Original)	Depends from claim 1.
4. (Original)	Depends from claim 3.
5. (Original)	Depends from claim 1.
6. (Original)	Depends from claim 1.
7. (Original)	Depends from claim 6.
8. (Original)	Independent.
9. (Original)	Depends from claim 8.
10. (Original)	Depends from claim 1.
11. (Original)	Depends from claim 10.
12. (Original)	Depends from claim 8.
13. (Original)	Depends from claim 8.
14. (Original)	Depends from claim 13.
15. (Original)	Independent.
16. (Original)	Depends from claim 15.
17. (Original)	Depends from claim 15.
18. (Original)	Depends from claim 17.
19. (Original)	Depends from claim 15.

20. (Original)

Depends from claim 15.

21. (Original)

Depends from claim 15.

#### A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application: 1-21.

#### B. STATUS OF ALL THE CLAIMS

1. Claims canceled: none
2. Claims withdrawn from consideration but not canceled: none
3. Claims pending: 1-21
4. Claims allowed: none
5. Claims rejected: 1-21
6. Claims objected to: none

#### C. CLAIMS ON APPEAL

Claims now on appeal: 1-21.

#### IV. STATUS OF AMENDMENTS

Appellant filed a Pre-Appeal Brief Request for Review on November 2, 2006. The Panel's Decision was to proceed to appeal without comment.

#### V. SUMMARY OF CLAIMED SUBJECT MATTER

As described by the Abstract, the embodiments of the present invention are generally directed to an apparatus and associated method for storing qualitative information about data with the data itself, rather than storing such information apart from the data. As described in paragraphs [0018], [0021], and [0030], for example, storing reliability information with user data eliminates the performance degradation otherwise associated with the overhead and extra I/Os necessary to manage the interactions of the information and the data when they are stored separately.

The embodiments of the present invention as recited by the language of independent claim 1 and the claims depending therefrom contemplate a method for storing data comprising the step of storing first information (such as 424A) with first data (such as 410), wherein the first information directly indicates the status of the first data. The method can be characterized by the status indicating a reliability of the first data (see e.g. paragraph [0016]). In some embodiments the first information is a data reliability qualifier ("DRQ") bit (see e.g. paragraph [0016]). The method of storing the first information with the first data can be characterized such as by appending it to or embedding it in the first data. (see e.g. paragraph [0032])

The method can further be characterized by storing second information (such as 474A) with second data (such as 460), wherein the second information indicates the status of the first data. (see e.g. paragraph [0022]) For example, the second information can be set to indicate that the first data is unreliable. (see e.g. paragraph [0024])

The embodiments of the present invention as recited by the language of claim 8 and the claims depending therefrom are generally directed to a method for protecting data comprising the step of accompanying the first information (such as 424A) with the first data (such as 410), wherein the first information indicates the status of the second data (such as 460) associated with the first data. (see e.g. paragraph [0019] lines 20-23) Preferably, the status is characterized in terms of the reliability of the second data, such as the DRQ bit.

The first data can be user data (such as 410) or parity data (such as 460), and the first information can indicate the reliability of the second data in either case. In some embodiments the second information can be stored with the first information in order to indicate the status of both the first and the second data. (see e.g. paragraph [0019] lines 30-31)

The method can further be characterized as storing the second information (such as 474A) to the second data (such as 460), the second information indicating the status of the second data, such as the reliability of the second data.

The embodiments of the present invention as recited by the language of claim 15 and the claims depending therefrom are generally directed to storage areas (such as 410, 460), and circuitry (such as 120) configured to perform at least one of a group consisting of a reading and a writing of the storage areas, wherein at least one of the storage areas includes the first information accompanying the first data, and wherein the first information indicates the status of the second data associated with the first data. Preferably, the storage areas are in a redundant array of inexpensive drives ("RAID") configuration. (see e.g. paragraph [0017]) The first information is stored with the first data, such as by being appended to or embedded in the first data. (see e.g. paragraph [0032]) Preferably, the first information and the first data are generated by the same function. (see e.g. paragraph [0021])

## VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1-21 stand rejected under 35 USC 102 as being anticipated by U.S. 5,774,643 to Lubbers ("Lubbers '643").

Claims 1-5, 8-12, 15, 16, and 18-21 stand rejected under 35 USC 102 as being anticipated by U.S. 5,379,411 to Morgan ("Morgan '411").

## VII. ARGUMENT

IT IS CLEAR ERROR THAT THE EXAMINER HAS NOT SUBSTANTIATED A *PRIMA FACIE* CASE OF ANTICIPATION BY FAILING TO SHOW THAT LUBBERS '643 IDENTICALLY DISCLOSES ALL THE RECITED FEATURES OF CLAIMS 1, 8, AND



Claim 1

Claim 1 recites *storing first information with first data*. The plain meaning of the term *with* is “together.” That is, if a first object is put “with” another object, then they are found to be “together.” In the context of this claim, a reasonable construction of the term *with* means the *first information* and the *first data* are stored together.

The skilled artisan readily recognizes that data is stored in blocks of storage space; that is, data is stored according to a specific block address. If the *first information* is stored in one block and the *first data* is stored in a different block, they cannot reasonably be viewed as being stored with each other because they are stored apart at different block addresses.

However, claim 1 stands finally rejected on the basis of the Examiner construing the term *with* to mean “apart.” Particularly, the Examiner’s basis for the rejection is that Lubbers ‘643 discloses a forced error (“FE”) bit table depicting some blocks of storage space that are allocated for storing metadata (*first information*) and different blocks that are allocated for storing user data (*first data*).

The Examiner admits that Lubbers ‘643 discloses the conventional manner of storing data in blocks, and admits that the FE bit table of Lubbers ‘643 clearly requires that the metadata and the user data be stored in different blocks because they are depicted at different coordinate locations in the FE bit table. (Advisory Action of 10/24/2006) Nonetheless, the Examiner has steadfastly concluded that Lubbers ‘643 anticipates claim 1 because it discloses “the first information is stored within the same table as the first data....” (Office Action of 8/2/2006, pg. 8, Advisory Action of 10/24/2006)

Appellant has repeatedly argued without rebuttal by the Examiner that this conclusion is baseless because the skilled artisan recognizes that data is not stored to a table,

but rather to a block. Even if the user data and the metadata are stored in different blocks that are depicted in a common table, they are clearly apart with respect to how they are stored in relation to each other. The evidence in the record that weighs against the term *with* meaning “apart” includes the Examiner’s own admissions that the cited reference itself discloses data being stored in blocks and not tables, and that the cited table itself requires them to be stored in different blocks. The Examiner has offered no evidence in support of his fanciful meaning of the term *with*; only dogmatic insistence that it means “apart.”

There is ample support for Appellant’s position that *with* meaning “together” is consistent with the term’s usage in the specification. Particularly, only if the metadata and the user data are stored together can the FE bit table be eliminated and the advantages of the present embodiments realized:

As is apparent, the present invention has several advantages over the scheme described in FIGS. 3A and 3B. First, the additional accessing of a device to write FE-bit information is not required since the separate FE-bit portions 318, 328, 338 and 348 are eliminated. Furthermore, the need to store the FE-bit table is eliminated. Since the FE-bit table maintenance can consume a substantial amount of processing overhead, such elimination will save critical path CPU cycles. Also, considering that the DRQ bit is automatically retrieved when the data is, there is no real performance degradation to check for it being set, which it usually is not.  
(specification, paragraph [0021], emphasis added)

One aspect of the present invention is the elimination of separate FE bit table lookup and I/Os to determine the reliability of a particular piece of data by embedding the DRQ information with the data. The equivalent to the FE bit table information exists, but in a different form--it is distributed or embedded with the data, and its redundancy and distribution is the same as that of the data. This allows the minimization of the performance overhead associated with determining the data reliability. It also allows elimination of the storage mapping complexity (both on disk and in controller memory) associated with a separate

FE bit table when compared to other DIF-enabled systems. Another aspect of the present invention is the DRQ bit has the same redundancy as the data, achieved by using the same parity algorithm on the DRQ bit as on the data. (specification, paragraph [0030])

In construing the term *with*, the Examiner has not provided any evidence whatsoever that justifies supplanting the plain meaning “together” with its antonym “apart.”

The Examiner’s claim construction is clearly erroneous for being unreasonably broad. The Examiner’s construction ignores the plain meaning of the phrase *storing first information with first data*, the plain meaning being consistent with its usage in the specification, thereby effectively ignoring explicitly recited claim language. *In re Morris* 43 USPQ2d 1753 (Fed. Cir. 1997)

Therefore, the Examiner has not substantiated a *prima facie* case of anticipation by failing to show that Lubbers ‘643 identically discloses *storing first information with first data*. Appellant is entitled to an evidentiary showing as to how the cited reference anticipates each recited claim element within a construction that is reasonably broad and consistent with term usage in the specification.

Accordingly, the examination resulting in this rejection is incomplete with regard to the Examiner’s obligation to consider the patentability of the invention as claimed. 37 CFR 1.104(a)(1). Because the final rejection is lacking the requisite *prima facie* basis, it also does not provide a reason for the rejection that is useful in aiding Appellant to judge the propriety of continuing the prosecution. 37 CFR 1.104(a)(2).

Appellant’s position is that the rejection of claim 1 and the claims depending therefrom is inappropriate in the law and should be reversed.

### Claim 8

Claim 8 recites accompanying first information with first data. As discussed above, the plain meaning of the term *with* is “together.” The plain meaning of the term *accompanying* is “joining.” That is, if a first object is “accompanying with” another object, then they are found to be “joined together.” In the context of this claim, a reasonable construction of the phrase *accompanying...with* means the *first information* and the *first data* are joined together.

Claim 8 stands finally rejected on the same basis as claim 1, by the Examiner construing the phrase *accompanying...with* to mean “splitting...apart.” As discussed above, Appellant has provided evidence of ample support that the disputed claim language plainly means that the *first information* and the *first data* are joined together in the manner in which they are accessed and stored in the same block. However, in construing this claim the Examiner has not provided any evidence whatsoever that justifies supplanting the plain meaning “joined together” with its antonym “splitting apart.”

For the same reasons as above for claim 1, the Examiner’s claim construction is clearly erroneous for being unreasonably broad. The Examiner’s construction ignores the plain meaning of the phrase accompanying first information with first data, the plain meaning being consistent with its usage in the specification, thereby effectively ignoring explicitly recited claim language. *In re Morris*

Therefore, the Examiner has not substantiated a *prima facie* case of anticipation by failing to show that Lubbers ‘643 identically discloses accompanying first information with first data. Appellant is entitled to an evidentiary showing as to how the cited reference anticipates each recited claim element within a construction that is reasonably broad and consistent with term usage in the specification.

Accordingly, the examination resulting in this rejection is incomplete with regard to the Examiner's obligation to consider the patentability of the invention as claimed. 37 CFR 1.104(a)(1). Because the final rejection is lacking the requisite *prima facie* basis, it also does not provide a reason for the rejection that is useful in aiding Appellant to judge the propriety of continuing the prosecution. 37 CFR 1.104(a)(2).

Appellant's position is that the rejection of claim 8 and the claims depending therefrom is inappropriate in the law and should be reversed.

#### Claim 15

Claim 15 recites *first information accompanying first data*. As discussed above for claims 1 and 8, the plain meaning of the term *accompanying* is "joining." That is, if a first object is "accompanying" another object, then they are found to be "joining" each other. In the context of this claim, a reasonable construction of the term *accompanying* means the *first information* and the *first data* are joined.

Claim 15 stands finally rejected on the same basis as claims 1 and 8, by the Examiner construing the term *accompanying* to mean "splitting." As discussed above, Appellant has provided evidence of ample support that the disputed claim language plainly means that the *first information* and the *first data* are joining each other in the manner in which they are stored and accessed in the same block. However, in construing this claim the Examiner has not provided any evidence whatsoever that justifies supplanting the plain meaning "joining" with its antonym "splitting."

For the same reasons as above for claims 1 and 8, the Examiner's claim construction is clearly erroneous for being unreasonably broad. The Examiner's construction ignores the plain meaning of the phrase *first information accompanying first data*, the plain meaning

being consistent with its usage in the specification, thereby effectively ignoring explicitly recited claim language. *In re Morris*

Therefore, the Examiner has not substantiated a *prima facie* case of anticipation by failing to show that Lubbers '643 identically discloses *first information accompanying first data*. Appellant is entitled to an evidentiary showing as to how the cited reference anticipates each recited claim element within a construction that is reasonably broad and consistent with term usage in the specification.

Accordingly, the examination resulting in this rejection is incomplete with regard to the Examiner's obligation to consider the patentability of the invention as claimed. 37 CFR 1.104(a)(1). Because the final rejection is lacking the requisite *prima facie* basis, it also does not provide a reason for the rejection that is useful in aiding Appellant to judge the propriety of continuing the prosecution. 37 CFR 1.104(a)(2).

Appellant's position is that the rejection of claim 15 and the claims depending therefrom is inappropriate in the law and should be reversed.

IT IS CLEAR ERROR THAT THE EXAMINER HAS NOT SUBSTANTIATED A *PRIMA FACIE* CASE OF ANTICIPATION BY FAILING TO SHOW THAT MORGAN '411 IDENTICALLY DISCLOSES ALL THE RECITED FEATURES OF CLAIMS 1, 8, AND 15

#### Claim 1

Claim 1 recites a *method for storing data* by *storing first information with the first data, wherein the first information directly indicates the status of the first data*. By indicating the *status* of the *first data*, generally the *first information* must qualitatively characterize the *data*. For example, there is ample support in the specification that the present embodiments as claimed contemplates the *first information* indicating whether the

*first data* is reliable (or "good") data for processing by the host, as opposed to it being unreliable; such as for example:

As background, data are stored on a storage device such as a disc drive. The data may become corrupted because of physical defects on the media of the storage device. The data may also be corrupted for other reasons beside physically defective media. One example is when the data has been lost from a "write back" cache and which data was lost is known. Another example is when data cannot be reconstructed for an inoperative disk drive because the redundant copy is on physically defective media. In these cases, the data are not good or reliable even though the media where the data resides is not defective. Therefore, Data Reliability Qualifier (DRQ) bits are used to signal storage system 100 that the data are not reliable. The storage system then can force an error message to the operating environment when the data is accessed. (specification paragraph [0016], emphasis added)

Another use of the present invention will be explained with reference to FIGS. 6A and 6B. FIG. 6A exemplifies when a device 620 is inoperative or "missing" in a disk array group 600. If a read request is made that resolves to device 620, the storage system controller receives data blocks P4, 11 and 12 from respective devices 610, 630 and 640. The controller will perform error detection of each block to ensure that the data is "good" (reliable from the point of view of the drive). If the data is "good", the storage system controller will exclusive-OR the parity data P4 in device 510 with data blocks 11 and 12 in respective devices 630 and 640. (specification paragraph [0025], emphasis added)

FIG. 6B shows when device 620 is inoperative and data block 12 of device 640 is unreliable. As described above, if a read request is made that accesses inoperative device 620, the storage system controller receives data blocks P4, 11 and 12 from respective devices 610, 630 and 640. The controller will perform error detection of each block to ensure that the data is "good". If any of the data is not "good", then the controller informs the host environment that the read cannot be performed. (specification, paragraph [0026], emphasis added)

With further reference to FIG. 6B, writing data will be explained. In the case where data is to be written to block 10 of missing device 620 and block 12 of device 640 is unreadable (not "good"), the data in block 10 cannot be "stored in the parity data" in block P4 of device 610 because block 12 is unreadable. That is, the data in block 10 would normally be "stored" by generating a new parity block that is the exclusive-OR of the data in block 10 that is being written and the data in blocks 11 and 12. Normally, this situation results in a block that cannot be written. The data in block 12, however, can be made "good" by writing it with either "best guess" data or some pattern. The DRQ bit in the associated information data for block 12 will be set to "1" to remember that the data in block 12 is "unreliable". Now the data in block 10 can be "stored in the parity" because the data in block 12 has been "made good." The parity DRQ bit associated with parity block P4 will be generated using exclusive-OR from the new DRQ bit for data block 10, the existing DRQ bit for data block 11 and the set DRQ bit that represents the data in block 12 as unreliable.

(specification paragraph [0027], emphasis added)

FIG. 7 shows another use of the present invention. Shown is an array 700 that includes devices 710, 720, 730 and 740 configured as RAID 0. In other words, the data is striped but there is no parity. As such, the data is not recoverable. In the case where data block 14 (shown as the striped-out data block in device 720) is unreadable (not "good"), the data block is made readable again by either writing a "best guess" of the data in data block 14, or a pattern. Such a pattern can be all zeros. However, the data in data block 14 cannot be trusted and is, therefore, "unreliable." So the associated DRQ bit is set to indicate that the data in data block 14 is not trustworthy. The "Data Reliability Qualifier" should be understood as "logical metadata" associated with "logical blocks" even for RAID-0, where there is no redundancy.

(specification paragraph [0028], emphasis added)

Appellant has argued without rebuttal by the Examiner that the code bits in Morgan '411 do not indicate the status of data, but rather they indicate what step in the operation was taking place when a fault in the operation occurs; see, for example:



When such a fault occurs, predetermined code bits are set to indicate the data operation that was taking place when the fault occurred.

(Morgan '411 Abstract, emphasis added)

The identity of the faulty operation is indicated using predetermined code bits that identify the particular data transfer operation that was taking place at the time of the fault.

(Morgan '411, col. 5 lines 42-45, emphasis added)

The set code bits are accessed using error recovery routines and the accessed code bits are used in generating failure data that is utilized by service personnel in taking corrective action at step 106. It should be understood that the setting and unsetting (re-setting) of the predetermined code bits refers to, respectively, setting the bits to preselected values, one per each operation whose failure is to be detected, and, unsetting the bits to some preselected value indicating no failed operation...Thus, determination can be made as to which data operation was taking place when the fault occurred.

(Morgan '411, col. 6 lines 28-52, emphasis added)

After the code bits in Morgan '411 are set when a fault in the operation occurs, the operation continues nonetheless. (see e.g. Morgan '411 col. 2 lines 63-67) This is because even determining merely what operation step was taking place when the fault occurred requires that a service person employ complex error recovery schemes to ascertain information from the code bits. (see e.g. Morgan '411 col. 6 lines 28-31) Morgan '411 is inherently incapable of *storing first information* that qualitatively characterizes the *first data* in any way whatsoever. If it was capable of doing so then it would do so to prevent occurrences of faults in the operation, as in the present embodiments, instead of merely recording where they happen in the operation as the faults continue to cascade.

The Examiner has not provided any evidence whatsoever that the code bits in Morgan '411 identically disclose *storing first information with first data* that *directly indicates the status of the first data*. The Examiner's claim construction is clearly erroneous for being

unreasonably broad. The Examiner's construction ignores the plain meaning of the phrase *first information directly indicates the status of the first data*, the plain meaning being consistent with its usage in the specification, thereby effectively ignoring explicitly recited claim language. *In re Morris*

Therefore, the Examiner has not substantiated a *prima facie* case of anticipation by failing to show that Morgan '411 identically discloses *first information directly indicates the status of the first data*. Appellant is entitled to an evidentiary showing as to how the cited reference anticipates each recited claim element within a construction that is reasonably broad and consistent with term usage in the specification.

Accordingly, the examination resulting in this rejection is incomplete with regard to the Examiner's obligation to consider the patentability of the invention as claimed. 37 CFR 1.104(a)(1). Because the final rejection is lacking the requisite *prima facie* basis, it also does not provide a reason for the rejection that is useful in aiding Appellant to judge the propriety of continuing the prosecution. 37 CFR 1.104(a)(2).

Appellant's position is that the rejection of claim 1 and the claims depending therefrom is inappropriate in the law and should be reversed.

#### Claims 8 and 15

Claims 8 and 15 recite *accompanying first information with first data, wherein the first information indicates status of second data associated with the first data*. This claim language plainly recites two sets of data. For example, there is ample support in the specification that the present embodiments as claimed contemplate the *first information* qualitatively characterizing both the user data and its parity data counterpart; such as for example:

Portion 424A, according to the present invention, contains a "Data Reliability Qualifier" or DRQ-bit that qualifies not only the data in data portion 410 but all redundant copies of that data. The DRQ flag is logically appended to the contents of the data block and maintained with identical redundancy as the bits in the data portion. It should be viewed as a copy of "logical metadata" in the same sense as the data portion is considered a copy, with possible redundancy, of a "logical block" of a "logical unit" created using any of the techniques known as "virtualization". Portion 424A can contain additional metadata bits that qualify the data. Some of these bits may also be "logical metadata" and maintained with identical redundancy to the data bits. Some of these bits may be "physical metadata" and apply only to the particular copy to which they are appended. For example, portion 424A can contain a "Parity" flag bit, set to "0" (or "FALSE") for data blocks 400, that indicates that the block in question contains some form of parity for other user data blocks. (specification, paragraph [0019], emphasis added)

Claims 8 and 15 stand finally rejected based upon the Examiner's construction in which he points to steps 70 and 74 of FIG. 2. The Examiner's position is that the appending code bits to each data block in step 74 defines first data, and that the converting data to a form suitable for the data blocks in step 70 defines second data. (Office Action of 8/2/2006, ppg. 9-10)

The Examiner's claim construction is clearly erroneous because it relies on a mischaracterization of what Morgan '411 actually discloses. That is, both steps 70 and 74 are actually performed on the same block of data, not first and second data as claimed. Even the passage to which the Examiner points explicitly states that both steps 70, 74 are done in conjunction for each data block:

In conjunction with converting the data to a suitable configuration, at step 74, a code byte having a number of code bits is appended to each block of the configured data. (Morgan '411 col. 5 lines 56-59, emphasis added)

The Examiner's claim construction is clearly erroneous for being based on a mischaracterization of what the cited reference actually discloses. Therefore, the Examiner has not substantiated a *prima facie* case of anticipation by failing to show that Morgan '411 identically discloses *the first information indicates status of the second data*. Appellant is entitled to an evidentiary showing as to how the cited reference anticipates each recited claim element within a construction that is reasonably broad and consistent with term usage in the specification.

Accordingly, the examination resulting in this rejection is incomplete with regard to the Examiner's obligation to consider the patentability of the invention as claimed. 37 CFR 1.104(a)(1). Because the final rejection is lacking the requisite *prima facie* basis, it also does not provide a reason for the rejection that is useful in aiding Appellant to judge the propriety of continuing the prosecution. 37 CFR 1.104(a)(2).

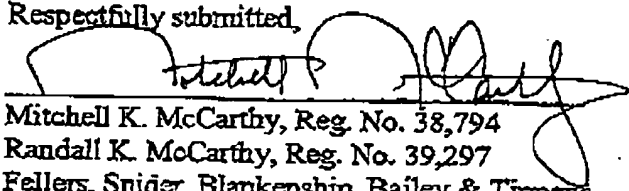
Appellant's position is that the rejection of claims 8 and 15 and the claims depending therefrom is inappropriate in the law and should be reversed.

### Conclusion

In conclusion, Appellant respectfully requests that the rejection of all pending claims be reversed.

Respectfully submitted,

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### VIII. CLAIMS APPENDIX

1. (Original) A method for storing data comprising the step of storing first information with first data, wherein the first information directly indicates the status of the first data.
2. (Original) The method of claim 1 wherein the status indicates a reliability of the first data.
3. (Original) The method of claim 1 wherein the first information is a data reliability qualifier bit.
4. (Original) The method of claim 3 wherein the first information is embedded with the first data.
5. (Original) The method of claim 1 wherein the first information is appended with the first data.
6. (Original) The method of claim 1 further comprising the step of storing second information with second data, the second information indicating the status of the first data.
7. (Original) The method of claim 6 wherein the second information is set to indicate that the first data is unreliable.
8. (Original) A method for protecting data comprising the step of accompanying first information with first data, wherein the first information indicates status of second data associated with the first data.
9. (Original) The method of claim 8 wherein the status indicates a reliability of the second data.

10. (Original) The method of claim 1 wherein the first information is a data reliability qualifier.

11. (Original) The method of claim 10 wherein the first data is parity data.

12. (Original) The method of claim 8 wherein the first information is set to indicate that the second data is unreliable.

13. (Original) The method of claim 8 further comprising the step of storing second information to the second data, the second information indicating the status of the second data.

14. (Original) The method of claim 13 wherein the second information is set to indicate that the second data is unreliable.

15. (Original) An apparatus comprising:  
storage areas; and  
circuitry configured to perform at least one of a group consisting of a reading and a writing of the storage areas, wherein at least one of the storage areas includes first information accompanying first data, wherein the first information indicates status of second data associated with the first data.

16. (Original) The apparatus of claim 15 wherein the circuitry includes a controller that is adapted to store the first information with the first data.

17. (Original) The apparatus of claim 15 wherein at least another of the storage areas includes second information stored with the second data that indicates a status of the second data.

18. (Original) The apparatus of claim 17 wherein the storage areas are in a RAID configuration.

19. (Original) The apparatus of claim 15 wherein the first information is appended to the first data.

20. (Original) The apparatus of claim 15 wherein the first information is embedded in the first data.

21. (Original) The apparatus of claim 15 wherein the first information and the first data are generated by the same function.

### **IX. EVIDENCE APPENDIX**

No additional evidence is included.

### **X. RELATED PROCEEDINGS APPENDIX**

There exist no relevant related proceedings concerning this Appeal before the Board.